

Amendments to the Claims

The following listing of claims replaces all prior versions of the claims and all prior listings of the claims in the present application.

1-44. (canceled)

45. (new) A process for producing tires, comprising:

sequentially producing incomplete tire structures in at least one assembly line;

temporarily storing the incomplete tire structures;

transferring the incomplete tire structures to at least one completion station;

in the at least one completion station, forming at least one constituent tire element on each incomplete tire structure; and

subjecting completed tire structures to vulcanization;

wherein sequentially producing the incomplete tire structures comprises:

building a carcass structure in a form of a substantially cylindrical sleeve; and

shaping the carcass structure so as to have a substantially toroidal shape;

wherein the carcass structure comprises at least one carcass ply operationally associated with annular reinforcing structures,

wherein the annular reinforcing structures are axially spaced apart from each other, and

wherein forming the at least one constituent tire element comprises laying down at least one continuous long element of elastomer material along a predetermined path.

46. (new) The process of claim 45, wherein at least two incomplete tire structures are processed simultaneously in a same completion station.

47. (new) The process of claim 45, wherein at least two incomplete tire structures are subjected simultaneously to forming the at least one constituent tire element on each incomplete tire structure in a same completion station.

48. (new) The process of claim 45, wherein sequentially producing the incomplete tire structures further comprises:

manufacturing a belt structure; and

associating the belt structure with the carcass structure.

49. (new) The process of claim 48, wherein associating the belt structure with the carcass structure is performed before shaping the carcass structure so as to have the substantially toroidal shape.

50. (new) The process of claim 48, wherein associating the belt structure with the carcass structure is performed after shaping the carcass structure so as to have the substantially toroidal shape.

51. (new) The process of claim 48, wherein associating the belt structure with the carcass structure is performed at a same time as shaping the carcass structure so as to have the substantially toroidal shape.

52. (new) The process of claim 45, wherein building the carcass structure is performed on a building drum, and
wherein shaping the carcass structure is performed on a shaping drum.

53. (new) The process of claim 52, wherein before temporarily storing the incomplete tire structures, the incomplete tire structures are disengaged from the shaping drum.

54. (new) The process of claim 45, wherein building the carcass structure and shaping the carcass structure are both performed on a same building and shaping drum.

55. (new) The process of claim 54, wherein before temporarily storing the incomplete tire structures, the incomplete tire structures are disengaged from the building and shaping drum.

56. (new) The process of claim 45, wherein temporarily storing the incomplete tire structures is performed in a storage station.

57. (new) The process of claim 45, wherein during forming the at least one constituent tire element, each incomplete tire structure is supported on a respective support member.

58. (new) The process of claim 57, wherein the respective support member comprises a shaping drum or a building and shaping drum.

59. (new) The process of claim 45, wherein forming the at least one constituent tire element comprises laying down the at least one long element in circumferential turns around an axis of the incomplete tire structure.

60. (new) The process of claim 59, wherein the circumferential turns are partially superimposed.

61. (new) The process of claim 45, wherein the at least one constituent tire element comprises one or more of sidewalls, a tread band, a tread band underlayer, and an anti-abrasive strip or strips.

62. (new) The process of claim 45, wherein the at least one constituent tire element comprises sidewalls and a tread band.

63. (new) The process of claim 45, wherein the at least one constituent tire element comprises sidewalls, a tread band, and a tread band underlayer.

64. (new) The process of claim 45, wherein during forming the at least one constituent tire element, each incomplete tire structure is moved inside the at least one completion station

using a rotational movement about at least one axis of the incomplete tire structure and a translatory movement with respect to at least one supplying member of the at least one long element.

65. (new) The process of claim 45, wherein after forming the at least one constituent tire element, unvulcanized tire structures are disengaged from a support member and temporarily stored before subjecting the completed tire structures to vulcanization.

66. (new) The process of claim 45, wherein the incomplete tire structures supplied from an assembly line are transferred to at least two completion stations.

67. (new) The process of claim 45, wherein batches of incomplete tire structures supplied from at least two assembly lines are transferred to one completion station.

68. (new) A plant for producing tires, comprising:

at least one assembly line for producing incomplete tire structures;

at least one storage station for temporarily storing the incomplete tire structures; and

at least one completion station;

wherein the at least one assembly line comprises:

at least one apparatus for building carcass structures in a form of a substantially cylindrical sleeve; and

at least one apparatus for shaping the carcass structures so as to have a substantially toroidal shape;

wherein the carcass structures each comprise at least one carcass ply operationally associated with annular reinforcing structures,

wherein the annular reinforcing structures are axially spaced apart from each other,

wherein the at least one completion station comprises:

at least one member for supplying at least one continuous long element of elastomer material; and

at least two units for handling the incomplete tire structures from the at least one assembly line; and

wherein the handling units are able to impart to the incomplete tire structures a rotational movement about at least one axis of respective incomplete tire structures and a translatory movement with respect to the at least one supplying member, so as to form on the respective incomplete tire structures at least one constituent tire element by laying down the at least one long element along a predetermined path.

69. (new) The plant of claim 68, wherein the at least one apparatus for building the carcass structures comprises a building drum.

70. (new) The plant of claim 68, wherein the at least one apparatus for shaping the carcass structures comprises a shaping drum.

71. (new) The plant of claim 68, wherein the at least one apparatus for building the carcass structures and the at least one apparatus for shaping the carcass structures are incorporated in a unistage drum.

72. (new) The plant of claim 68, wherein the at least one assembly line comprises at least one auxiliary drum for forming a belt structure.

73. (new) The plant of claim 72, wherein the at least one assembly line comprises at least one transfer member for transferring the belt structure into a position radially on the outside of a respective carcass structure.

74. (new) The plant of claim 68, further comprising:
an unloading station for completed tire structures from the at least one completion station.

75. (new) The plant of claim 68, wherein the at least one completion station comprises at least two supplying members.

76. (new) The plant of claim 75, wherein the at least two supplying members are arranged symmetrically with respect to a same vertical plane of symmetry.

77. (new) The plant of claim 76, wherein the at least two handling units are arranged symmetrically with respect to the vertical plane of symmetry.

78. (new) The plant of claim 75, wherein a first supplying member and a second supplying member are arranged so that respective long elements of elastomer material are supplied substantially at a same height.

79. (new) The plant of claim 78, wherein a third supplying member is arranged so that a respective long element of elastomer material is supplied at a height vertically greater than the substantially same height of the first and second supplying members.

80. (new) The plant of claim 68, wherein the at least one completion station comprises first, second, and third supplying members.

81. (new) The plant of claim 80, wherein the first supplying member and the second supplying member are arranged so that respective long elements of elastomer material are supplied substantially at a same height.

82. (new) The plant of claim 81, wherein the third supplying member is arranged so that a respective long element of elastomer material is supplied at a height vertically greater than the substantially same height of the first and second supplying members.

83. (new) The plant of claim 68, wherein at least two completion stations are associated with each assembly line.

84. (new) The plant of claim 68, wherein at least two assembly lines are associated with each completion station.

85. (new) A completion station, comprising:
at least one member for supplying at least one continuous long element of elastomer material; and
at least two units for handling incomplete tire structures;
wherein the handling units are able to impart to the incomplete tire structures a rotational movement about at least one axis of respective incomplete tire structures and a translatory movement with respect to the at least one supplying member, so as to form on the respective incomplete tire structures at least one constituent tire element by laying down the at least one long element along a predetermined path.

86. (new) The completion station of claim 85, further comprising:
at least two supplying members.

87. (new) The completion station of claim 86, wherein the at least two supplying members are arranged symmetrically with respect to a same vertical plane of symmetry.

88. (new) The completion station of claim 87, wherein the at least two handling units are arranged symmetrically with respect to the vertical plane of symmetry.

89. (new) The completion station of claim 86, wherein a first supplying member and a second supplying member are arranged so that respective long elements of elastomer material are supplied substantially at a same height.

90. (new) The completion station of claim 89, wherein a third supplying member is arranged so that a respective long element of elastomer material is supplied at a height vertically greater than the substantially same height of the first and second supplying members.

91. (new) The completion station of claim 85, further comprising:
first, second, and third supplying members.

92. (new) The completion station of claim 91, wherein the first supplying member and the second supplying member are arranged so that respective long elements of elastomer material are supplied substantially at a same height.

93. (new) The completion station of claim 92, wherein the third supplying member is arranged so that a respective long element of elastomer material is supplied at a height vertically greater than the substantially same height of the first and second supplying members.